



Subject: Computing

Year group: 6

Term: Spring Term

Unit name: Variables in Games

Vocabulary	
Variables	Sensors
Visual coding (Scratch blocks-block coding)	Program
Program writing	Code
Relational operators	Decomposition
Measure input (scoring)	Scratch
Generate	Input
Process	Emulator
Condition	Selection,
if... then... else,	Condition
simulation	Selection
Output	debug

Big idea: To apply knowledge of the programming constructs and use their design to create their own simulation of a scoreboard.

This unit explores the concept of variables in programming through games in Scratch. First, learners find out what variables are and relate them to real-world examples of values that can be set and changed. Then they use variables to create a simulation of a scoreboard. Then they will follow the Use-Modify-Create model, to experiment with variables in an existing project, then modify them, before they create their own project. Learners later focus on design. Finally, in Lesson 6, learners apply their knowledge of variables and design to improve their games in Scratch.

Progression of skills :

Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.

Understands the difference between, and appropriately uses if and if, then and else statements.

Uses a variable and relational operators within a loop

Designs, writes and debugs modular programs using procedures (Scratch)

Knows that a procedure can be used to hide the detail with sub-solution.

Prior learning:

Year 3 Sequence in Music. Children used motion, sound and event blocks to create a representation of a piano in the Scratch environment .

Year 4 Repetition in shapes Children have used repetition and loops with Purple Mash 2Logo.

Year 5 Selection in Physical computing Children use repetition and conditions to write algorithms. They use selection through the if...then..structure.

Key learning assessment statements:

- To define a 'variable' as something that is changeable
- To identify that variables can hold numbers or letters
- To explain that a variable has a name and a value
- To choose how to improve a game by using variables
- To design a project that builds on a given example
- To use my design to create a project
- To test my program
- To evaluate my project

Spiritual Development

Computing allows children to reflect on the awe and wonder of the achievements and possibilities of ICT in a modern world. They think about the limitless opportunities that could be achieved thus promoting their sense of self and motivation. Exodus 15:11: And amazement seized them all, and they glorified God and were filled with awe, saying, "We have seen extraordinary things today."

National Curriculum links :

Computing

- Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
- Use sequence, selection, and repetition in programs; work with variables and various forms of input and output
- Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
- Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information

